2012790 *date* 09/05/95, *clock* 20.26.08

RDFI/Q Data Types Implementation
Version 1.8.25

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RDFI/Q Data Types Implementation

Version 1.8.25

The following document contains the version 1.8 implementation of RDFI/Q data types. The extraction rules specify how RDFI obtains the value for each RDFI fact from a complete IDN record. This release adds facts TN and SC and is the first which is also implemented on the mainframe. Both these facts are nonstandard, and are discussed separately in appendix A. The differences between versions 1.7 and 1.8 are listed in appendix B. A history of amendments to version 1.8 is given in appendix C.

IDN records contain fields which are identified by field identifiers (FID). There are thousands of possible field numbers, but each IDN record contains only a subset. The template determines which fields are contained in the IDN record. Thus, a particular field need not occur occur in every IDN record. However FID 1, the product code, is present in every IDN record.

For most of the FACTS selected by RDFI, a particular field is selected from the IDN record. But, for some FACTS the field chosen depends on the product code value (field 1) of the IDN record. In these cases, there is a list of exception product codes which shows the alternative fields to use. Furthermore, the choice of field sometimes depends on whether the desired FID is present in the IDN record or on the data content of the fields. In these cases, a list of possible FIDs is given, with an indication of the selection rule appearing to the left.

DEFINITION:

A FID is INVALID if it does not appear in the IDN record.
A FID is VALID if it appears in the IDN record, even if the value is blank or of length zero.
A FID is NULL if it is VALID, but has length zero.
A FID is NONNULL if it is VALID, and has length greater than zero.
A FID is NONZERO if it is NONNULL, and contains a nonzero number.

When RDFI selects a particular FID, it returns:

the FID value	if the field is NONNULL.
-7777777	if the field is INVALID.
-9999999	if the field is NULL.

In addition, RDFI can return two other error values:

-6666666	if the ric and/or fact was not requested.
-8888888	if the ric itself is invalid.

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There are four cases where the selected FID is not fixed, but depends on the IDN record contents as well. In each case a RDFI must choose from a list of FIDs according to one of the following rules.

1) first valid
   - RDFI selects the first VALID FID from the list, else the last.

2) first nonzero
   - RDFI selects the first NONZERO FID from the list, else the last.

3) 1st nonzero(m)
   - RDFI selects the first NONZERO FID from the list, else the last.
   - RDFI then appends a marker, depending on the field actually used, unless the field is INVALID or NULL. The map from field number to mark is given by the table below.

FID	Description	Marker
6	trade	t
21	previous close	p
22	bid	b
25	ask	a
70	settlement	s
120	NAV	n
122	assets	z
134	mid-price	m
136	prev mid-price	v
143	Italian official close	c
164	kassakurse	k
173	kerb	u
207	previous closing bid	y

4) average
   - in this case the FID list has two elements
   - RDFI averages the two FIDs.
   - since both values are required, the general rule is modified:
     if either field is not VALID, RDFI returns -7777777
     if either field is not NONZERO, RDFI returns -9999999.

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FACT	*DESCRIPTION*	*RULE*	*FID*
AC	*Alternative Close*		*INVALID FIELD*
	Exceptions:		
	COPENHAGEN FUTS EQS		76
	13 47 60 147 3081		
	MADRID EQUITIES		76
	40 3132 3686		
	MILAN EQUITIES1	*first nonzero*	76 143
	25 198 201 3089 3139 3614 3617		
	GERMAN EQUITIES		164
	8 20 21 177 179 182 183 188		
	190 193 197 2479 2482 2808 2809 2810		
	2811 2957 2960 2981 2983 2984 2985 3021		
	3024 3026 3027 3028 3029 3030 3031 3032		
	3034 3035 3036 3038 3039 3040 3041 3042		
	3043 3045 3059 3073 3079 3083 3085 3086		
	3087 3088 3091 3092 3095 3100 3105 3108		
	3110 3114 3115 3116 3118 3119 3120 3121		
	3122 3123 3124 3125 3128 3138 3140 3141		
	3144 3167 3170 3174 3185 3199 3200 3201		
	3220 3221 3222 3223 3224 3225 3226 3228		
	3229 3230 3231 3650 3651 3652		
	HONG KONG EQUITIES		6
	5 3076 3077 3078		
	NASDAQ	*first valid*	22 122 120
	74 203 2787 2788		
AF	*Active Flag 1*		975
AI	*Activity Index 1*		270
AM	*Average Maturity*		123
AQ	*Ask Qualifier*		346
A1	*Primary Activity*		393
A2	*Second Activity*		275
BA	*Best Ask*		441
BB	*Best Bid*		436
BD	*Bench Date*		861
BG	*Background Page*		105
BP	*Bench Price*		860
BQ	*Bid Qualifier*		345
BT	*Block Trade*		42
BV	*Block Volume*		43
CF	*Conversion Factor*		1078

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CG	*Capital Gains*		152
CM	*Contract Month*		41
CN	*CEDEL Number*		141
CR	*Coupon Rate*		69
CS	*Cross Rate Scale*		825
CU	*Currency*		15
DI	*Dividend*		71
DR	*Special Release Date*		229
DS	*Special Dividend*		233
DV	*Date of Historical Volume*		392
ED	*Expiry Date*		67
EN	*Euroclear Number*		140
EU	*Energy Units*		864
EX	*Exchange Identifier*		4
E1	*Energy Special1 Text*		854
FL	*First Link*	*first valid*	240 800
FV	*Floor Volume*		899
F1	*Foonote No. 1*		148
F2	*Footnote No. 2*		149
GC	*Special Capital Gain*		232
GD	*Generic Value1 Date*		1028
G1	*General Value 1*		996
G2	*General Value 2*		997
G3	*General Value 3*		998
G4	*General Value 4*		999
G6	*General Value 6*		1030
HV	*Historical Volume*		383
HY	*High Yield*		365
H2	*Historical Close 2*		963
IA	*Issues Advancing*		84
ID	*Issues Declining*		85

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IT Total Issues Traded ---------- 106

IU Issues Unchanged ---------- 86

LB Daily Low Bid ---------- 206

LK Latest Rate with Marker ---------- 1st nonzero(m) 6 22 25 21

Exceptions:
MILAN EQUITIES1 ---------- 1st nonzero(m) 143 6 21
25 198 201 3089 3139 3614 3617
GERMAN EQUITIES ---------- 1st nonzero(m) 6 164 21
8 20 21 177 179 182 183 188
190 193 197 2479 2482 2808 2809 2810
2811 2957 2960 2981 2983 2984 2985 3021
3024 3026 3027 3028 3029 3030 3031 3032
3034 3035 3036 3038 3039 3040 3041 3042
3043 3045 3059 3073 3079 3083 3085 3086
3087 3088 3091 3092 3095 3100 3105 3108
3110 3114 3115 3116 3118 3119 3120 3121
3122 3123 3124 3125 3128 3138 3140 3141
3144 3167 3170 3174 3185 3199 3200 3201
3220 3221 3222 3223 3224 3225 3226 3228
3229 3230 3231 3650 3651 3652
WORLD INDICES ---------- 1st nonzero(m) 6 21
212
JAPANESE EUROWARRANTS ---------- 1st nonzero(m) 134 22 25 136
202 2943
NASDAQ ---------- 1st nonzero(m) 122 6 22 25 120 21 207
74 203 2787 2788
FUTURES AND OPTIONS ---------- 1st nonzero(m) 70 6 22 25 21
6 7 18 19 24 26 28 32
47 49 50 51 53 54 55 60
65 67 68 70 71 72 78 79
82 87 88 91 92 95 96 97
98 100 101 103 104 106 107 108
109 110 111 115 118 119 121 123
124 125 126 129 130 132 133 134
140 146 147 148 149 150 151 152
153 154 156 159 166 167 172 206
215 220 222 229 230 232 233 234
235 240 243 244 246 254 2042 2450
2471 2476 2490 2492 2496 2497 2498 2499
2541 2542 2545 2600 2665 2776 3081 3146
3152 3153 3154 3159 3160 3161 3162 3166
3169 3242 3861 3941 3942 3944 3961 3963
3979 3998 4048
NON EQUITY OPTIONS ---------- 1st nonzero(m) 70 6 22 25 21
52 81 120 170

LM Latest Midprice (calculated) ---------- average 22 25

LP Price Location ---------- 858

LR Latest Rate ---------- first nonzero 6 22 25 21

Exceptions:
MILAN EQUITIES1 ---------- first nonzero 143 6 21
25 198 201 3089 3139 3614 3617
GERMAN EQUITIES ---------- first nonzero 6 164 21

```
      8   20   21  177  179  182  183  188
    190  193  197 2479 2482 2808 2809 2810
   2811 2957 2960 2981 2983 2984 2985 3021
   3024 3026 3027 3028 3029 3030 3031 3032
   3034 3035 3036 3038 3039 3040 3041 3042
   3043 3045 3059 3073 3079 3083 3085 3086
   3087 3088 3091 3092 3095 3100 3105 3108
   3110 3114 3115 3116 3118 3119 3120 3121
   3122 3123 3124 3125 3128 3138 3140 3141
   3144 3167 3170 3174 3185 3199 3200 3201
   3220 3221 3222 3223 3224 3225 3226 3228
   3229 3230 3231 3650 3651 3652
  WORLD INDICES  ------------------------   first nonzero 6 21
    212
  JAPANESE EUROWARRANTS  ----------------   first nonzero 134 22 25 136
    202 2943
  NASDAQ  -------------------------------   first nonzero 122 6 22 25 120 21 207
     74  203 2787 2788
  FUTURES AND OPTIONS  -------------------   first nonzero 70 6 22 25 21
      6    7   18   19   24   26   28   32
     47   49   50   51   53   54   55   60
     65   67   68   70   71   72   78   79
     82   87   88   91   92   95   96   97
     98  100  101  103  104  106  107  108
    109  110  111  115  118  119  121  123
    124  125  126  129  130  132  133  134
    140  146  147  148  149  150  151  152
    153  154  156  159  166  167  172  206
    215  220  222  229  230  232  233  234
    235  240  243  244  246  254 2042 2450
   2471 2476 2490 2492 2496 2497 2498 2499
   2541 2542 2545 2600 2665 2776 3081 3146
   3152 3153 3154 3159 3160 3161 3162 3166
   3169 3242 3861 3941 3942 3944 3961 3963
   3979 3998 4048
  NON EQUITY OPTIONS  --------------------   first nonzero 70 6 22 25 21
     52   81  120  170
```

LT	*Latest Trade*	6
LU	*Lot Size Units*	54
LY	*Low Yield*	366
L1	*Leg1 Expiry*	818
L2	*Leg2 Expiry*	819
MD	*Maturity Date*	68
MP	*Midprice*	134
MV	*Market Volume*	985
NA	*Net Asset Value*	120
NB	*Net Back*	35
NC	*NAV Net Change*	121
ND	*NAV Date*	150

NH	New Highs	108
NL	New Lows	101
NP	NAV Previous Date	155
NS	Special NAV	230
NV	NASDAQ Volume Flag	72
N1	Nominal	1057
OA	Order Ask	432
OI	Open Interest	64
OP	Offer Price	151
OT	Open Type	49
OY	Open Yield	364
O1	First Open Commodities	47
O2	Second Price Open (commoditi	48
O3	Open Price 2 (money)	961
PA	Price Ask	25

Exceptions:
NASDAQ — first valid 25 151
74 203 2787 2788

PB	Price Bid	22
PC	Previous Close	21

Exceptions:
NASDAQ — first valid 21 207
74 203 2787 2788

PD	Date of Previous Close	79

Exceptions:
NASDAQ — first valid 79 208
74 203 2787 2788

PE	Permissionable Entity	1
PH	Price High	12

Exceptions:
NASDAQ — first valid 12 203
74 203 2787 2788
MONEY2000 — first valid 203 12
56 361 363 550 551 552 553 554
555 556 557 558 559 560 561 562
563 564 565 566 567 568 569 570
571 572 573 576 577 578 580 2433

2697 2698 2701 2702 2807 2932 3903 3904
3905 3906 3907 3908 3909 3910 3911 3912
3914 3915 3916 3917 3918 3920 3921 3922
3923 3924 3925 3926 3929 3931 3945 3946
3947 3948 3949 3950 3951 3952 3953 3954
3955 3956 3957 3958 3959 3960

PL *Price Low* ---------- 13

Exceptions:
NASDAQ ---------- *first valid* 13 204
74 203 2787 2788
MONEY2000 ---------- *first valid* 204 13
56 361 363 550 551 552 553 554
555 556 557 558 559 560 561 562
563 564 565 566 567 568 569 570
571 572 573 576 577 578 580 2433
2697 2698 2701 2702 2807 2932 3903 3904
3905 3906 3907 3908 3909 3910 3911 3912
3914 3915 3916 3917 3918 3920 3921 3922
3923 3924 3925 3926 3929 3931 3945 3946
3947 3948 3949 3950 3951 3952 3953 3954
3955 3956 3957 3958 3959 3960

PM *Price Moves* ---------- 77

PN *NAV Previous Day* ---------- 154

PO *Price Open* ---------- 19

Exceptions:
NASDAQ ---------- *first valid* 19 57
74 203 2787 2788
MONEY2000 ---------- *first valid* 57 19
56 361 363 550 551 552 553 554
555 556 557 558 559 560 561 562
563 564 565 566 567 568 569 570
571 572 573 576 577 578 580 2433
2697 2698 2701 2702 2807 2932 3903 3904
3905 3906 3907 3908 3909 3910 3911 3912
3914 3915 3916 3917 3918 3920 3921 3922
3923 3924 3925 3926 3929 3931 3945 3946
3947 3948 3949 3950 3951 3952 3953 3954
3955 3956 3957 3958 3959 3960
NA FUTURES OPTIONS ---------- *first valid* 47 19
81 87 91 92 95 97 98 100
103 104 106 107 108 110 115 116
118 119 120 121 123 124 125 126
129 130 132 133 134 166 167 170
171 206 240 244 246 247 2450 2454
2476 2542 2665 3013 3050 3051 3052 3053
3146 3152 3153 3154 3159 3160 3161 3162
3166 3169 3785 3861 3973 3982

PV *Previous Session Volume* ---------- 758

QC *Quote Count* ---------- 955

Q1 *Price Qualifier* ---------- 118

Q2 *Price Qualifier 2* ---------- 131

Q3	*CTS Qualifier*	40
Q4	*NASDAQ Status*	119
RT	*Record Type*	259
R1	*Real Time Yield 1*	356
R2	*Date Range*	859
SA	*slot ask*	919
SB	*Slot Bid*	918
SC	*Status Code*	*See Appendix A.*
SD	*Split Dividend*	153
SH	*Session High*	957
SL	*Session Low*	959
SN	*Short (Display) Name*	3
SP	*Settlement Price*	70
SR	*Special ReleaseNAV*	231
ST	*Strike Price for Options*	66
SU	*Turnover Scaling Factor*	380
SV	*Slot Volume*	916
S1	*Scaling Factor*	280
S2	*Official Source Code 2*	1055
TB	*Type of Bond*	\104
TD	*Latest Trade Date*	*first valid* 16 17
TN	*Template Number*	0
TO	*Type of Option: Put/Call*	109
TS	*Slot Trade*	912
TT	*Trade Tone Marker*	344
TU	*Turnover*	100
TV	*Trade Price Volume*	178
T2	*Generic Text2*	1052
T3	*Generic Text3*	1053
UD	*Update Date*	875

UT	*Update Time*	1010
VA	*Volume Advancing*	81
VD	*Volume Dealt*	791
VF	*Volume Flag*	355
VN	*Valoren Number*	142
VO	*Volume Traded*	32
VT	*Total Volume*	80
VU	*Volume Unchanged*	83
VV	*Volume Declining*	82
VY	*Price Volatility*	886
XC	*Official Code*	78
XS	*Official Source Code 2*	869
X2	*Official Code 2*	1056
YE	*Seven Day Effective Yield*	125
Y1	*Sec. Yield 1*	970
Y7	*Compounded Seven Day Yield*	124

APPENDIX A
EXCEPTION FACTS

There are three facts which do not fit the normal pattern.

AC - Alternate close
This has no default FID. For rics with product code not listed in the exceptions, RDFI will return -7777777 (invalid fact).

TN - Template number
This field is not obtained from one of the numbered fields on the IDN record. Our extraction software artificially creates FID 0, so that the mainframe extraction rules can extract TN, without exception logic.

SC - Status Code.
This field can not be extracted from the RIC record at all, but is available through separate channels. It is available from RDFI proper, but not through the mainframe extraction rules. Currently we access it through the SSL software as a 2-digit numeric status code, but if and when we move to virtual circuits, it will come through virtual circuits routines. The field returned by RDFI is a 5-digit field:
digits 1-2: SSL return code
digits 3-5: virtual circuits return code.

Currently, the virtual circuits return code is blank, but we strongly recommend that software making use of the SC facts use both fields, in order to remain compatible with future RDFI releases. At least one of the two will always be updated by RDFI.

SSL return codes (digits 1-2)

blank	-	Unimplemented function	09	-	Source did not respond
01	-	Illegal Name	10	-	OK
02	-	Non-existant item	11	-	Possible loss of data
03	-	Too many requests	12	-	Restart in progress
04	-	Access removed	13	-	Restart after comms probl
05	-	Name in use	15	-	Disconnect
06	-	Item deleted	16	-	Recall
07	-	Preempted	17	-	Source going down
08	-	Communications problem			

Virtual Circuits status codes (digits 3-5)

blank	-	No status	150	-	DFT Initialized
002	-	Ric Unavailable	151	-	Recovery Started
006	-	Invalid Syntax	152	-	Recovery cancelled
007	-	Invalid Opcode	153	-	Recovery Complete
014	-	Invalid FID	154	-	DFT failure
015	-	Invalid value	161	-	DFT is up
016	-	Query Done	162	-	DFT disconnected

APPENDIX B
CHANGES IN RELEASE 1.8

Two new facts SC, and IN have been added. These are discussed in appendix A. In addition the following changes have been made to the extraction rules:

1) PE 8 was added to German Equities and Bonds.
   The new product code list is 8 20 21 177 179 182 183 188 190 193 197.
   This affects fact AC (alternate close) only.

2) For fact AC, Italian Equities (product code 25 198 201) FID 143 is now used instead of FID 173.

3) Some RICs were moved from product code 74 (part of NASDAQ) to product code 203 (US Mutual). As a result we have amalgamated the two groups, and for each RDFI fact have combined the FID lists into one. Thus US Mutual loses its separate identity, and we are now using NASDAQ to refer to product codes 74 203 2787 2788 instead of 74 2787 2788.

Here is a list of the those extraction rules which have changed:

Code	Description	Rule	FID(s)
AC	German Equities		164
	Italian Equities		143
	Nasdaq(74 203 2787 2788)	first valid	22* 122* 120+
LK	Nasdaq(74 203 2787 2788)	1st nonzero(m)	122* 6* 22* 25* 120+ 21 107*
LR	Nasdaq(74 203 2787 2788)	1st nonzero	122* 6* 22* 25* 120+ 21 107*
PA	Nasdaq(74 203 2787 2788)	first valid	25* 151+
PC	Nasdaq(74 203 2787 2788)	first valid	21 207*
PD	Nasdaq(74 203 2787 2788)	first valid	79 208*
PH	Nasdaq(74 203 2787 2788)	first valid	12 203*
PL	Nasdaq(74 203 2787 2788)	first valid	13 204*
PO	Nasdaq(74 203 2787 2788)	first valid	19 57*
SC	see appendix A		
IN	see appendix A		

\+ indicates that the FID was formerly in the list for US Mutual only.
* indicates the FID was formerly in the NASDAQ list only.

APPENDIX C
HISTORICAL CHANGES TO RELEASE 1.8

Version 1.8.2

MILAN△EQUITIES2 was created, consisting of PE 3089.
Extraction rule for AC,MILAN EQUITIES2: first non-zero of FID 76 143

Version 1.8.3

MONEY 2000 (PH, PL, PO)	- added pe	2433
FUTURES & OPTIONS (LK, LR)	- added pe	3146 3152 3153 3154 3160 3161 3162 3166 3169
NA FUTURES & OPTIONS (PO)	- added pe	3146 3152 3153 3154 3160 3161 3162 3166 3169

Version 1.8.4

MILAN EQUITIES1 (AC, LK, LR)	- merged with ITALIAN EQUITIES & MILAN EQUITIES2	

now consists of pe 25 198 201 3089 3139.
Extraction rule for AC,MILAN EQUITIES1: first non-zero of 76 143
Extraction rule for LK,MILAN EQUITIES1: first non-zero of 173 143 6 21

GERMAN EQUITIES (AC, LK, LR)	- added pe	3083 3085 3086 3114 3116 3118 3120 3122 3124 3199-3201 3222
NA FUTURES & OPTIONS (PO)	- added pe	3050 3053 3159 3861
FUTURES & OPTIONS (LK, LR)	- added pe	2490 2492 2496-2499 2776 3050 3053 3159 3081 3242 3861

Version 1.8.5 Released Sept 24, 1992

GERMAN EQUITIES (AC, LK, LR)	- added pe	2479 2482
HONG KONG EQUITIES (AC)	- added pe	3076 3077 3078
JAPAN EUROWARRANTS (LK, LR)	- added pe	2943
NA FUTURES & OPTIONS (PO)	- added pe	2542
FUTURES & OPTIONS (LK, LR)	- added pe	215 2042 2471 2541 2542 2545 2600

Version 1.8.6

GERMAN EQUITIES (AC, LK, LR)	- added pe	3079
FUTURES & OPTIONS (LK, LR)	- added pe	3941 3942

Version 1.8.7 Released Oct 16, 1992

WORLD INDICES (LK, LR)	- added pe	361
MONEY 2000 (PH, PL, PO)	- added pe	363 5554 2697 2698 2701-2702 2932 3903-3912 3914-3918 3920-3926 3929 3931 3945-3960

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Version 1.8.8 Released Oct 28, 1992

WORLD INDICES	(LK, LR)	- removed	pe 361
MONEY 2000	(PH, PL, PO)	- added	pe 361
GERMAN EQUITIES	(AC, LK, LR)	- added	pe 2808 2809 2810 2811

Version 1.8.9 Released Dec 17, 1992

The extraction rule for facts LK and LR was changed for MILAN EQUITIES1 to first valid of fids 143 6 21. Fid 173 was dropped from the start of the list.

NA FUTURES & OPTIONS (PO) - added pe 3982

Nine new FACTS were added:

FACT	DESCRIPTION	FID
A1	Primary Activity	393
BP	Bench Price	860
ED	Expiry Date	67
H2	Historical Close 2	963
O3	Open Price 2 (money)	961
SH	Session High	957
SL	Session Low	959
TB	Type of Bond	104
TO	Type of Option: Put/Call	109

Version 1.8.10 Released Jan 04, 1993

Ten new FACTS were added:

FACT	DESCRIPTION	FID
A2	Second Activity	275
CF	Conversion Factor	1078
CR	Coupon Rate	69
CS	Cross Rate Scale	825
G1	General Value 1	996
G2	General Value 2	997
LU	Lot Size Units	54
MD	Maturity Date	68
QC	Quote Count	955
VD	Volume Dealt	791

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Version 1.8.11 Released Jan 22, 1993

MONEY 2000 (PH, PL, PO) - added pe 2807
NA FUTURES & OPTIONS (PO) - added pe 3051

Version 1.8.12 Released Feb 24, 1993

One new FACT was added:

FACT	DESCRIPTION	FID
FL	First Link	first valid of 240 800

Version 1.8.13 Released May 5, 1993

Seven new facts added:

FACT	DESCRIPTION	FID
AI	Activity Ind. 1	270
G3	General Value 3	998
G4	General Value 4	999
NB	Net Back	35
R1	Real Time Yield 1	356
S1	Scaling Factor	280
Y1	Sec. Yield 1	970

Version 1.8.14 Released August 3, 1993

Eighteen new facts added:

FACT	DESCRIPTION	FID
AF	Active Flag 1	975
AM	Average Maturity	123
CG	Capital Gains	152
DI	Dividend	71
DR	Special Release Date	229
DS	Special Dividend	233
F1	Footnote 1	148
F2	Footnote 2	149
GC	Special Capital Gain	232
MV	Market Volume	985
NC	NAV Net Change	121
ND	NAV Date	150
NS	Special NAV	230
OP	Offer Price	151
SD	Split Dividend	153
TS	Slot Trade	912
YE	Seven Day Effective Yield	125
Y7	Compounded Seven Day Yield	124

Version 1.8.15 Released October 25, 1993

The extraction rule for fact LM changed to return the value of the non-zero FID in cases where one FID contains a zero value; previously LM returned (non-zero FID)/2.

Five new facts added:

FACT	DESCRIPTION	FID
NP	NAV Previous Date	155
PN	NAV Previous Day	154
PV	Previous Session Volume	758
UD	Update Date	875
UT	Update Time	1010

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Version 1.8.16 Released February 17, 1994

Six new facts added:

FID	DESCRIPTION	FID
AQ	Ask Qualifier	346
BQ	Bid Qualifier	345
N1	Nominal	1057
S2	Official Source Code 2	1055
X2	Official Code 2	1056
XS	Official Source Code	869

Version 1.8.17 Released April 9, 1994

FUTURES AND OPTIONS (LK, LR) - Added PEs 2450 2476 2665
NA FUTURES OPTIONS (PO) - Added PEs 2450 2476 2665

Five new facts added:

FACT	DESCRIPTION	FID
CU	Currency	15
TV	Trade Price Volume	178
OY	Open Yield	364
HY	High Yield	365
LY	Low Yield	366

Version 1.8.18 Released June 27, 1994

GERMAN EQUITIES (AC, LK, LR) - Added PEs 3021 3024 3026 3027 3028 3029
3030 3031 3032 3034 3035 3036
3038 3039 3040 3041 3042 3043
3045 3059 3073 3087 3088 3091
3092 3100 3105 3108 3110 3115
3119 3121 3123 3124 3125 3128
3138 3140 3141 3144 3167 3170
3174 3185 3220 3221 3224 3225
3226 3228 3229 3230 3231

Six new facts added:

FACT	DESCRIPTION	FID
TU	Turnover	100
SR	Special Release NAV	231
SU	Scaling Factor Turnover	380
SV	Slot Volume	916
SB	Slot Bid	918
SA	Slot Ask	919

Version 1.8.19 Released August 08,1994

GERMAN EQUITIES (AC, LK, LR) - Added PE 3095

FUTURES and OPTIONS (LK, LR) - Added PEs 3944 3961 3963 3979 3998 4048

Four new facts added:

FACT	DESCRIPTION	FID
BG	Background Page	105
CI	CEDEL Number	141
EI	Euroclear Number	140
VI	Valoren Number	142

Version 1.8.20 Released September 14, 1994

MONEY2000 (PH, PL, PO) - Added PE 580

One new fact added:

FACT	DESCRIPTION	FID
NA	Net Asset Value	120

Version 1.8.21 Released December 05, 1994

New group added:
MADRID EQUITIES (AC) - PEs 40 3132

Changes to existing groups:
MILAN EQUITIES1 (AC, LK, LR) - Added PEs 3614 3617
NA FUTURES OPTIONS (PO) - Added PEs 3013 3052 3973

FUTURES AND OPTIONS (LK, LR) - Deleted PEs 3050 3053

Version 1.8.22 Released February 13, 1995

Changes to existing groups:
NA FUTURES OPTIONS (PO) - Added PE 2454

Five new facts added:

FACT	DESCRIPTION	FID
CM	Contract Month	41
GD	Generic Value 1 Date	1028
O1	First Open Commodities	47
T2	Generic Text2	1052
T3	GEneric Text3	1053

Version 1.8.23 Released April 10, 1995

Changes to existing groups:
GERMAN EQUITIES (AC, LK, LR) - Added PEs 3650 3651 3652

Ten new facts added:

FACT	DESCRIPTION	FID
IA	Issues Advancing	84
ID	Issues Declining	85
IT	Total Issues Traded	106
IU	Issues Unchanged	86
NH	New Highs	108
NL	New Lows	101
VA	Volume Advancing	81
VT	Total Volume	80
VU	Volume Unchanged	83
VV	Volume Declining	82

Version 1.8.24 Released June 26, 1995

New Group Added:
COPENHAGEN FUTSAEQS (AC) - PEs 13 47 60 147 3081

Eight new facts added:

FACT	DESCRIPTION	FID
BD	Bench Date	861
EU	Energy Units	864
E1	Energy Special1 Text	854
FV	Floor Volume	899
LP	Price Location	858
OA	Order Ask	432

R2	Date Range	859
VY	Price Volatility	886

Version 1.8.25 Released September 5, 1995

Changes to existing groups:
MADRID EQUITIES (AC) - Added PE 3686
NA FUTURES OPTIONS (PO) - Added PE 3785

Five new facts added:

FACT	DESCRIPTION	FID
BA	Best Ask	441
BB	Best Bid	436
G6	General Text 6	1030
L1	Leg1 Expiry	818
L2	Leg2 Expiry	819